

1 Michael R. Headley (SBN 220834)

2 [headley@fr.com](mailto:headley@fr.com)

3 FISH & RICHARDSON P.C.

4 500 Arguello Street, Suite 500

5 Redwood City, CA 94063

6 Tel: 650-839-5070

7 Fax: 650-839-5071

8 William R. Woodford (Admitted *Pro Hac Vice*)

9 [woodford@fr.com](mailto:woodford@fr.com)

10 Jason M. Zucchi (Admitted *Pro Hac Vice*)

11 [zucchi@fr.com](mailto:zucchi@fr.com)

12 FISH & RICHARDSON P.C.

13 3200 RBC Plaza

14 60 South Sixth Street

15 Minneapolis, MN 55402

16 Tel: 612-335-5070

17 Fax: 612-288-9696

18 Attorneys for Plaintiff VTT TECHNICAL

19 RESEARCH CENTRE OF FINLAND LTD.

20 UNITED STATES DISTRICT COURT

21 NORTHERN DISTRICT OF CALIFORNIA

22 OAKLAND DIVISION

23 VTT TECHNICAL RESEARCH CENTRE OF  
24 FINLAND LTD.,

25 Plaintiff,

26 v.

27 SITIME CORPORATION,

28 Defendant.

Case No. 4:19-cv-1174-YGR

**VTT'S RESPONSIVE CLAIM  
CONSTRUCTION BRIEF**

## TABLE OF CONTENTS

|      |  |    |
|------|--|----|
| I.   | INTRODUCTION .....   | 1  |
| II.  | ARGUMENT .....   | 2  |
| A.   | SiTime’s Proposal for the “at least two regions” Limitation Is<br>Inconsistent with the Intrinsic Record and Federal Circuit<br>Precedent. ....          | 2  |
| B.   | SiTime’s Proposal for the “Opposite In Sign” Term Conflicts<br>with Agreed-Upon Constructions and Wrongly Incorporates an<br>Intent Requirement. ....    | 4  |
| C.   | Claim 29 Contains an Obvious Error and there Can Be No<br>Reasonable Debate that the Temperature Drift Should Be<br>Evaluated Over a 100°C Range. ....   | 6  |
| D.   | The Terms “drive means” and “sense means” Convey a Class of<br>Well-Known Structures, Which Are Also Reflected in the ’643<br>Patent Specification. .... | 7  |
| III. | CONCLUSION .....   | 11 |

## TABLE OF AUTHORITIES

**Page(s)**

### **Cases**

|   |    |
|---|----|
| <i>800 Adept, Inc. v. Murex Sec., LTD.</i> ,<br>539 F.3d 1354 (Fed. Cir. 2008).....                 | 10 |
| <i>Allen Eng'g Corp. v. Bartell Indus., Inc.</i> ,<br>299 F.3d 1336 (Fed. Cir. 2002).....           | 7  |
| <i>Amazon.com, Inc. v. Barnesandnoble.com, Inc.</i> ,<br>239 F.3d 1343 (Fed. Cir. 2001).....        | 5  |
| <i>Apex Inc. v. Raritan Computer, Inc.</i> ,<br>325 F.3d 1364 (Fed. Cir. 2003).....                 | 9  |
| <i>Baldwin Graphic Sys., Inc. v. Siebert</i> ,<br>512 F.3d 1338 (Fed. Cir. 2008).....               | 7  |
| <i>Cacace v. Meyer Mktg. Co., Ltd.</i> ,<br>812 547, 561 (S.D.N.Y. 2011) .....                      | 10 |
| <i>CCS Fitness, Inc. v. Brunswick Corp.</i> ,<br>288 F.3d 1359 (Fed. Cir. 2002).....                | 8  |
| <i>Datamize, LLC v. Plumtree Software, Inc.</i> ,<br>417 F.3d 1342 (Fed. Cir. 2005).....            | 5  |
| <i>Flexuspine, Inc. v. Globus Medical, Inc.</i> ,<br>2016 WL 4161887 (E.D. Tex. Aug. 5, 2016) ..... | 5  |
| <i>Greenberg v. Ethicon Endo-Surgery, Inc.</i> ,<br>91 F.3d 1580 (Fed. Cir. 1996).....              | 8  |
| <i>Hoffer v. Microsoft Corp.</i> ,<br>405 F.3d 1326 (Fed. Cir. 2005).....                           | 6  |
| <i>Intel Corp. v. U.S. Int'l Trade Comm'n</i> ,<br>946 F.2d 821 (Fed. Cir. 1991).....               | 5  |
| <i>JVW Enters., Inc. v. Interact Accessories, Inc.</i> ,<br>424 F.3d 1324 (Fed. Cir. 2005).....     | 3  |
| <i>Leviton Mfg. Co., Inc. v. Nicor, Inc.</i> ,<br>2006 WL 4079129 (N.M. May 23, 2006) .....         | 8  |

|    |  |      |
|----|--|------|
| 1  | <i>Linear Tech. Corp. v. Impala Linear Corp.</i> ,                       |      |
| 2  | 379 F.3d 1311 (Fed. Cir. 2004).....                                      | 8    |
| 3  | <i>Mass. Inst. of Tech. v. Abacus Software</i> ,                         |      |
| 4  | 462 F.3d 1344 (Fed. Cir. 2006).....                                      | 7    |
| 5  | <i>Novo Indus., L.P. v. Micro Molds Corp.</i> ,                          |      |
| 6  | 350 F.3d 1348 (Fed. Cir. 2003).....                                      | 6, 7 |
| 7  | <i>Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n</i> ,          |      |
| 8  | 161 F.3d 696 (Fed. Cir. 1998).....                                       | 9    |
| 9  | <i>Phillips v. AWH Corp.</i> ,   |      |
| 10 | 415 F.3d 1303 (Fed. Cir. 2005) (en banc).....                            | 2, 9 |
| 11 | <i>Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.</i> , |      |
| 12 | 711 F.3d 1348 (Fed. Cir. 2013).....                                      | 7    |
| 13 | <i>Rambus Inc. v. Hynix Semiconductor Inc.</i> ,                         |      |
| 14 | 2008 WL 4104116 (N.D. Cal. Aug. 27, 2008).....                           | 9    |
| 15 | <i>Rembrandt Data Techs., LP v. AOL, LLC</i> ,                           |      |
| 16 | 641 F.3d 1331 (Fed. Cir. 2011).....                                      | 8    |
| 17 | <i>Research Frontiers, Inc. v. E Inc. Corp.</i> ,                        |      |
| 18 | 2016 WL 1169580 (D. Del. Mar. 24, 2016).....                             | 10   |
| 19 | <i>Saunders Group, Inc. v. Comfortrac, Inc.</i> ,                        |      |
| 20 | 492 F.3d 1326 (Fed. Cir. 2007).....                                      | 3    |
| 21 | <i>SRI Int'l v. Matsushita Elec. Corp.</i> ,                             |      |
| 22 | 775 F.2d 1107 (Fed. Cir. 1985).....                                      | 3    |
| 23 | <i>Thorner v. Sony Comput. Entm't Am. LLC</i> ,                          |      |
| 24 | 669 F.3d 1362 (Fed. Cir. 2012).....                                      | 2    |
| 25 | <i>Vehicle IP, LLC v. AT &amp; T Mobility, LLC</i> ,                     |      |
| 26 | 594 Fed. Appx. 636 (Fed. Cir. 2014).....                                 | 9    |
| 27 | <i>WesternGeco LLC v. ION Geophysical Corp.</i> ,                        |      |
| 28 | 876 F. Supp. 2d 857 (S.D. Tex. 2012).....                                | 10   |
|    | <i>Williamson v. Citrix Online, LLC</i> ,                                |      |
|    | 770 F.3d 1371 (Fed. Cir. 2014).....                                      | 10   |
|    | <b>Statutes</b>  |      |
|    | 35 U.S.C. § 282.....   | 9    |

1 **I. INTRODUCTION**

2 The disputes concerning the “at least two regions” and “opposite in sign” limitations can  
3 be resolved by applying the customary meaning of the claim language, which is set forth in VTT’s  
4 proposed constructions. VTT’s proposals are also supported by the intrinsic record and  
5 declaration testimony of Dr. Carl Meinhart, an expert in the field. SiTime’s proposals for these  
6 terms seek to import examples from the specification and add an intent requirement, both of which  
7 are contrary to well-established Federal Circuit precedent. They also conflict with the parties’  
8 agreed-upon constructions and use ambiguous terminology that would be confusing to a jury.

9 The disputes over the remaining two terms stem from SiTime’s improper attempt to  
10 invalidate the asserted claims through the claim construction process. For claim 29, the parties  
11 appear to agree that the missing temperature range is an obvious error. Experts for both sides and  
12 the ’643 patent specification state that a resonator’s temperature drift must be considered over a  
13 specific temperature range. Further, the correction of the claim to include the missing temperature  
14 range cannot be subject to reasonable debate. Claim 30 references “the” temperature range, which  
15 indicates that it was supposed to be included in claim 29. Further, the file history shows that the  
16 temperature range appeared in original claim 29 and the examiner inadvertently moved it when  
17 creating dependent claim 30. For the “drive means” and “sense means” limitations, Dr.  
18 Meinhart’s testimony, dictionary definitions, and SiTime’s own patent indicate that the ordinary  
19 meaning of those terms connote sufficient structure to perform the claimed functions. Further, the  
20 ’643 patent specification discloses those same structures even if the terms are construed as means-  
21 plus-function limitations. Although SiTime submitted a lengthy expert declaration, the absence of  
22 any expert testimony to support SiTime’s arguments for the drive and sense means limitations  
23 speaks volumes. Attorney argument is insufficient to invalidate claims, particularly in the face of  
24 overwhelming intrinsic and extrinsic evidence to the contrary.

25 Accordingly, VTT respectfully requests that the Court reject SiTime’s incorrect approach  
26 to claim construction and its proposals for the disputed terms. VTT’s proposed constructions  
27 follow the evidence and well-established Federal Circuit precedent.  
28

1 **II. ARGUMENT**

2 **A. SiTime’s Proposal for the “at least two regions” Limitation Is Inconsistent**  
 3 **with the Intrinsic Record and Federal Circuit Precedent.**

4 The claims require a “semiconductor element capable of deflecting or resonating and  
 5 comprising at least two regions have different materials properties.” (’643 Patent (Ex. 1, Dkt. No.  
 6 44-3) at 15:41-43, 18:5-7.)<sup>1</sup> The parties’ dispute focuses on the requirement that the  
 7 semiconductor element comprise “at least two regions having different material properties.” The  
 8 plain meaning of this phrase is not disputed and does not require construction. Both parties’  
 9 proposals actually restate the claim language. In addition, SiTime does not appear to dispute that  
 10 the “at least two regions” be found within the semiconductor element. Accordingly, VTT’s  
 11 proposal is consistent with the understanding of a person of ordinary skill in the art. (*See*  
 12 *Meinhart Decl.* (Dkt. No. 44-1) ¶¶ 34-35.)

13 SiTime’s proposal, on the other hand, deviates significantly from the customary meaning  
 14 of the claim language. (*Meinhart Decl.* ¶ 36.) The Federal Circuit requires that claim terms be  
 15 given their customary meaning unless the patentee either (1) sets out a definition and acts as his  
 16 own lexicographer or (2) disavows the full scope of a claim term either in the specification or  
 17 during prosecution. *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir.  
 18 2012). SiTime does not acknowledge, much less apply, this well-settled law. Further, SiTime  
 19 does not identify (or even allege) that the patent contains a definition or disavowal of claim scope.  
 20 The Court can reject SiTime’s claim construction proposal on this basis alone.

21 Although there is no legal basis to do so, SiTime asks the Court to limit the claims to two  
 22 examples in the specification. The ’643 patent expressly states that the concepts in SiTime’s  
 23 proposal are examples by introducing them both with the phrase “according to one embodiment.”  
 24 (*Meinhart Decl.* ¶ 39; *see also* ’643 patent at 3:27-31, 6:19-22, 6:30-33.) It is improper to limit the  
 25 claims to examples in the specification. *E.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed.  
 26 Cir. 2005) (en banc) (rejecting the idea of limiting otherwise broad claim language based on a

27  
 28 <sup>1</sup> Exhibit citations herein refer to the exhibits attached to the Declaration of William Woodford  
 submitted with VTT’s opening claim construction brief (Dkt. No. 44-2).

1 single disclosed embodiment); *see also Saunders Group, Inc. v. Comfortrac, Inc.*, 492 F.3d 1326,  
2 1332 (Fed. Cir. 2007) (“Even where a patent describes only a single embodiment, claims will not  
3 be read restrictively unless the patentee has demonstrated a clear intention to limit the claim  
4 scope.”); *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005)  
5 (refusing to limit claims “even when a specification describes very specific embodiments of the  
6 invention or even describes only a single embodiment.”); *SRI Int’l v. Matsushita Elec. Corp.*, 775  
7 F.2d 1107, 1121 (Fed. Cir. 1985) (“If everything in the specification were required to be read into  
8 the claims, or if structural claims were limited to devices operating precisely as a specification-  
9 described embodiment is operated, there would be no need for claims.”). SiTime, therefore, has it  
10 backwards when arguing that the claims can only cover the specific examples in the specification.

11 SiTime’s proposal to limit the claims to these two examples is also inconsistent with the  
12 other portions of the specification. (Meinhart Decl. ¶ 39.) Nothing in the patent requires that the  
13 region boundaries be “distinct” or that the properties within the region be a “gradient” or  
14 “continuously varying.” (*Id.*) For example, a few paragraphs after the language relied on by  
15 SiTime, the patent explains that the regions can have different doping agents, doping  
16 concentrations, and crystal orientations—all without any limitations. (’643 patent at 3:45-57; *see*  
17 *also* 3:65-4:7, 4:48-56, 11:56-12:7 (providing more examples of region boundaries, properties, and  
18 arrangements).) The plain language of the claims only requires different material properties,  
19 which would also include regions with boundaries that are not necessarily “distinct” or regions  
20 with properties that vary, but that may not do so “continuously.”

21 SiTime’s proposal is also wrong because it adds the requirement that “the temperature  
22 coefficients of the materials for the regions cancel each other to the claimed level.” The claims  
23 already specify the physical parameters required by the at least two regions of the semiconductor  
24 element. (Meinhart Decl. ¶ 38.) Claim 1, for example, states that “the temperature sensitivities of  
25 the generalized stiffness are opposite in sign at least at one temperature for the regions, and the  
26 overall temperature drift of the generalized stiffness of the semiconductor element is 50 ppm or  
27 less on a temperature range of 100° C.” (’643 patent at 15:52-57.) Claim 29 requires that “the  
28 overall temperature drift of the generalized stiffness of the semiconductor element is less than 50

ppm” over that same temperature range. (*Id.* at 18:21-22.) In addition, it is unclear what SiTime means by the phrase “temperature coefficients.” The ’643 patent discusses positive and negative “temperature coefficients” generally (3:33-38), as well as the existence of first order, second order, and even third order temperature coefficients (5:31-36). SiTime’s proposal does not explain which temperature coefficients are referenced in its construction or if it refers to them all.

VTT’s proposal is consistent with Federal Circuit precedent and the intrinsic record. Accordingly, VTT respectfully requests that the Court construe “at least two regions having different material properties” consistent with its plain meaning as “at least two regions within the semiconductor element that have different material properties.”

**B. SiTime’s Proposal for the “Opposite In Sign” Term Conflicts with Agreed-Upon Constructions and Wrongly Incorporates an Intent Requirement.**

Claim 1 requires that the at least two regions be “configured so that the temperature sensitivities of the generalized stiffness are opposite in sign at least at one temperature for the regions.” The parties have already agreed on the meaning of several terms in this limitation. For example, “generalized stiffness” means “the effective stiffness of the semiconductor element that depends upon the elastic parameters of the semiconductor material (such as  $C_{11}$ ,  $C_{12}$ , and  $C_{44}$  in the case of silicon crystals) and the resonant mode.” (Dkt. No. 39 at 1.) Further, “temperature sensitivities of the generalized stiffness” means “the variation of the generalized stiffness as temperature changes due to the influence of temperature on the elastic parameters of the semiconductor material for a given resonant mode.” (*Id.*)

The remaining phrase in the limitation, “are opposite in sign at least at one temperature for the regions,” refers to the variation of the generalized stiffness of at least two regions as temperature changes. Specifically, the claim language requires that, at least at one temperature, the variation of generalized stiffness due to the influence of temperature is “positive” for one region and “negative” for another region. (Meinhart Decl. ¶¶ 40, 42.) Consistent with this understanding, VTT’s proposal is that “at least at one temperature, the generalized stiffness of one region is increasing with increasing temperature and the generalized stiffness of a second region is decreasing with increasing temperature.” (*Id.* ¶ 42.)



1 SiTime's proposal wrongly ignores the parties' agreed-upon constructions. SiTime would  
2 replace the entire disputed phrase with "designed to ensure the temperature coefficients of the  
3 effective elastic modulus of the at least two regions are of opposite sign [at least at one  
4 temperature]." (SiTime Br. (Dkt. No. 45) at 13.) Specifically, SiTime states (at 14) that  
5 "temperature sensitivities of the generalized stiffness" refers to "its temperature coefficients of the  
6 effective elastic modulus," rather than the agreed-upon construction for that term. (*Compare* Dkt.  
7 No. 39 at 1.) SiTime cannot propose different meanings for the same terms.

8 SiTime's construction is also incorrect because it inserts an intent requirement into the  
9 claims. According to SiTime, the phrase "designed to ensure" in its proposal requires that the two  
10 regions be "purposefully engineered" to have opposing temperature coefficients. The claims,  
11 however, only require that the temperature sensitivities of the generalized stiffness be opposite in  
12 sign, regardless of whether the design was "purposeful" or not. Adding an intent requirement into  
13 the claims is inconsistent with the intrinsic record and legally improper. *See Intel Corp. v. U.S.*  
14 *Int'l Trade Comm'n*, 946 F.2d 821, 832 (Fed. Cir. 1991) (noting there is no intent element to  
15 direct infringement); *see also Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350  
16 (Fed. Cir. 2005) ("the scope of claim language cannot depend solely on the unrestrained,  
17 subjective opinion of a particular individual purportedly practicing the invention . . . [s]ome  
18 objective standard must be provided in order to allow the public to determine the scope of the  
19 claimed invention"); *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1353 (Fed.  
20 Cir. 2001) ("Amazon's reading of the key passage from the file history injects subjective notions  
21 into the infringement analysis . . . . We are not prepared to assign a meaning to a patent claim that  
22 depends on the state of mind of the accused infringer."); *Flexuspine, Inc. v. Globus Medical, Inc.*,  
23 2016 WL 4161887, at \*6 (E.D. Tex. Aug. 5, 2016) ("[T]he asserted claims are apparatus claims,  
24 and the subjective intent of the designer does not expand or contract the claim's scope. In other  
25 words, the infringement inquiry is based on the structure of the accused devices as claimed.").

26 In addition to these problems, SiTime's proposal incorporates ambiguous language that  
27 itself requires construction. For example, the '643 patent does not use the phrase "effective elastic  
28

modulus,” and that is not a term that would be readily understood by the jury. SiTime’s proposal also uses “temperature coefficients,” which is unclear for the reasons explained previously.

VTT respectfully requests that the Court adopt VTT’s proposal, which is consistent with the intrinsic record the parties’ agreed-upon constructions.

**C. Claim 29 Contains an Obvious Error and there Can Be No Reasonable Debate that the Temperature Drift Should Be Evaluated Over a 100°C Range.**

Claim 1 of the ’643 patent requires that “the overall temperature drift of the generalized stiffness of the semiconductor element is 50 ppm or less on a temperature range of 100° C.”

Claim 29 includes the same 50 ppm requirement, but does not recite the 100°C temperature range.

For the reasons explained in VTT’s opening brief, one of ordinary skill in the art would understand that the lack of a temperature range in issued claim 29 is an error and the correction (*i.e.*, construing the claim with the 100° C temperature range) is not subject to reasonable debate based on the claim language, specification, and file history. (*See* Meinhart Decl. ¶¶ 46-53.) The file history shows that original claim 29 recited the 100°C temperature range, as well as a 50 ppm and 10 ppm temperature drift. The error occurred when the patent examiner amended claim 29 to move the 10 ppm temperature drift requirement into a new dependent claim 30, but failed to replace the 100°C temperature range in claim 29. Under Federal Circuit precedent, the Court can correct the error during the claim construction process and adopt VTT’s proposal. *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003); *see also Hoffer v. Microsoft Corp.*, 405 F.3d 1326 (Fed. Cir. 2005).

SiTime appears to agree that one of ordinary skill in the art would understand that the missing temperature range in claim 29 is an error. For example, SiTime acknowledges that the ’643 patent specification “makes clear that the term ‘temperature drift’ does not refer to a single temperature only.” (SiTime Br. (Dkt. No. 45) at 15.) SiTime, citing expert testimony, further states that the “temperature drift of a material is defined over a range of temperatures.” (*Id.*) Thus, as Dr. Meinhart explained, the error in claim 29 is apparent from the face of the patent to one of ordinary skill in the art. (Meinhart Decl. ¶¶ 49-50.)

1        There can also be no reasonable debate that the 100°C temperature range should apply to  
 2 claim 29. (*See* Meinhart Decl. ¶ 51.) Dependent claim 30 references “*the* temperature range of  
 3 100° C,” and so does every other claim. The definite article “the” before the 100°C temperature  
 4 range in claim 30 shows that temperature range was also supposed to be recited in independent  
 5 claim 29. *See Baldwin Graphic Sys., Inc. v. Siebert*, 512 F.3d 1338, 1342-43 (Fed. Cir. 2008). In  
 6 addition, the patent specification repeatedly identifies a 100°C temperature range. (*See* VTT  
 7 Opening Br. (Dkt. No. 44) at 14-16.) Moreover, the patent never discusses temperature drift over  
 8 any and all temperature ranges as SiTime would alternatively interpret the claim. The prosecution  
 9 history of the ’643 patent plainly shows the origin of the error and supports the correction  
 10 proposed by VTT. (Meinhart ¶ 53; Ex. 2 at 29-30, 33-35.)

11        Although claim 29 contains an error and its correction is not subject to reasonable debate,  
 12 SiTime wrongly asks the Court to invalidate claim 29. (*See* Meinhart Decl. ¶¶ 54-55.) VTT  
 13 respectfully requests that the Court follow the Federal Circuit’s test in *Novo* and correct claim 29  
 14 to recite the 100°C temperature range set forth in dependent claim 30, throughout the  
 15 specification, and in original claim 29 before the patent examiner’s erroneous amendment.

16        **D.        The Terms “drive means” and “sense means” Convey a Class of Well-Known**  
 17 **Structures, Which Are Also Reflected in the ’643 Patent Specification.**

18        Although the phrase “drive or sense means” uses the word “means,” it should not be  
 19 construed as a means-plus-function limitation. *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d  
 20 1336, 1347 (Fed. Cir. 2002) (the “mere use of the word ‘means’ after a limitation, without more,  
 21 does not suffice to make that limitation a means-plus-function limitation.”). The undisputed  
 22 evidence overwhelmingly demonstrates that the phrase recites sufficient structure to perform the  
 23 claimed function to a person of ordinary skill in the art. *See Power Integrations, Inc. v. Fairchild*  
 24 *Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1365 (Fed. Cir. 2013) (finding function of claim term  
 25 was clear to an ordinarily skilled artisan and therefore means-plus-function treatment did not  
 26 apply); *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1356 (Fed. Cir. 2006) (noting that  
 27 a claim term connotes structure if it is used in common parlance to connote structure).  
 28

For example, Dr. Meinhart testifies that the terms “drive means” and “sense means” indicate a well-known class of structures to one of ordinary skill in the art. “Drive means” refers to a specific class of devices, such as a transducer, that actuates the semiconductor element and causes it to oscillate at or near its resonant frequency. (Meinhart Decl. ¶¶ 56-60.) “Sense means” refers to a class of devices, such as a transducer, that detects the movement of the semiconductor element. (Meinhart Decl. ¶¶ 59-61.) Dr. Meinhart’s testimony demonstrates that the disputed terms are not means-plus-function limitations. *E.g., Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331 (Fed. Cir. 2011) (“Expert testimony supports the conclusion that the limitations themselves convey sufficient structure to one of ordinary skill in the art to overcome the presumption of treatment under § 112, ¶ 6.”); *Leviton Mfg. Co., Inc. v. Nicor, Inc.*, 2006 WL 4079129, at \*10-13 (N.M. May 23, 2006) (finding a party demonstrated that claims containing “conductive path means” and “circuit interrupting means” recited sufficient structure to perform the claimed function and avoid § 112, ¶ 6 treatment based, in part, on expert testimony).

Scientific dictionaries support Dr. Meinhart’s testimony. They define “drive” as “[t]hat which controls a master resonator in an oscillator” and “[a] machine part that transmits motion or power to another part.” (Ex. 4 (Dkt. No. 44-6) at 370; Ex. 8 (Dkt. No. 44-10) at 548; Meinhart Decl. ¶ 62.) They define “sensor” as “[a]nother name for transducer” and the “[g]eneral name for detecting device used to locate (or detect) the presence of matter (or energy, eg sound, light, radio or radar waves).” (Ex. 4 at 1077; Ex. 9 (Dkt. No. 44-11) at 456; Meinhart Decl. ¶ 63.) These dictionary definitions are also sufficient to establish that the disputed terms connote an understood class of structures to one of ordinary skill in the art. *E.g., Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) (“Dictionary definitions make clear that the noun ‘detent’ denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms.”); *see also Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311 (Fed. Cir. 2004) (technical dictionary makes clear that “circuit” is structural); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002) (consulting dictionary definitions to determine that an artisan of ordinary skill would understand

the disputed term to have an ordinary meaning); *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 704 (Fed. Cir. 1998) (same).

SiTime's contemporaneous patents further support Dr. Meinhart's testimony. (*See* Meinhart Decl. ¶¶ 64-65.) For example, a 2008 SiTime patent repeatedly identifies "drive and sense circuitry" as structures that perform the functions recited in the VTT patent claims. (*E.g.* Ex. 5 (Dkt. No. 44-7) at 11:42-53, 14:3-10, 22:43-53, 23:32-40, Figs. 9-12.) The SiTime patent further explains that drive and sense circuitry are "conventional" and "well known." (*Id.* at 22:43-51.) Other patents use similar language to describe the structures that drive and sense a resonator. (Ex. 10 (Dkt. No. 44-12) at 2:57-59, Ex. 12 (Dkt. No. 44-14) at 3:37-50, 5:65-6:3.) These contemporaneous patents further confirm that "drive or sense means" conveys sufficient structure. *E.g., Phillips*, 415 F.3d at 1317-19 (explaining the use of extrinsic evidence in claim construction); *see also Vehicle IP, LLC v. AT & T Mobility, LLC*, 594 Fed. Appx. 636, 643-44 (Fed. Cir. 2014) (relying on a contemporaneous patent and dictionary definition to reverse the district court's construction of "way points"); *Rambus Inc. v. Hynix Semiconductor Inc.*, 2008 WL 4104116, at \*3 (N.D. Cal. Aug. 27, 2008) (relying on contemporaneous patents to further establish the meaning of a disputed term).

The evidence of the plain and ordinary meaning to one of ordinary skill in the art is consistent with the '643 patent specification. For example, the patent states that drive means and sense means are well-known structures and includes a specific example of a "transducer." ('643 Patent at 7:48-54 ("[t]he devices according to the invention can be actuated with drive, i.e., transducer means known per se.")) The specification provides further examples of the class of structures described by drive means and sense means. (*E.g.*, 4:57-67 (referring to a "piezoelectric drive" and "electrostatic actuator"), 6:43-58 (referring to a transducer means to excite the resonator); *see also* Meinhart Decl. ¶ 62.)

SiTime bears the burden of proving that the "drive or sense means" is subject to means-plus-function treatment. *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003). SiTime, however, provides no evidence to support its claim construction approach, much less the extreme request that the Court invalidate every single claim in the '643 patent. *Cf.* 35

U.S.C. § 282 (“Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independent of the validity of other claims”); *800 Adept, Inc. v. Murex Sec., LTD.*, 539 F.3d 1354, 1369 (Fed. Cir. 2008). SiTime presented declaration testimony from its expert, which included a section for three disputed terms. (Dkt. No. 45-5.) Notably missing from the declaration, however, is any testimony relating to the “drive or sense means” limitation. In other words, ***SiTime’s assertions*** (that the terms do not connote structure and the specification does not disclose corresponding structure) ***are based entirely on attorney argument***. Attorney argument is not sufficient to invalidate the claims. *See, e.g., Research Frontiers, Inc. v. E Inc. Corp.*, 2016 WL 1169580, at \*22 (D. Del. Mar. 24, 2016) (“Here, declining to address [defendant’s] argument is appropriate, as [defendant] provides only attorney argument in support of its position, which is insufficient to establish indefiniteness.”); *WesternGeco LLC v. ION Geophysical Corp.*, 876 F. Supp. 2d 857, 875 (S.D. Tex. 2012) (“Defendant’s unsupported attorney argument fails to prove indefiniteness by clear and convincing evidence.”); *Cacace v. Meyer Mktg. Co., Ltd.*, 812 547, 561 (S.D.N.Y. 2011) (explaining that “mere attorney argument is insufficient to establish invalidity based in indefiniteness”).

While SiTime argues that the terms drive means and sense means do not connote structure, the “Technology Overview” in its brief explains that this well-known class of structures is one of two primary components of an oscillator. For obvious reasons, SiTime avoids the “drive and sense circuitry” naming convention in its own patent and, instead, refers to the drive circuit as a “sustaining circuit.” (*Id.* (stating that a sustaining circuit is “used to drive the resonator in a continuous motion”).) In any case, SiTime’s reference to sustaining circuits without any discussion of their specific structures only reinforces that these are well-known structures to those of ordinary skill in the art. That these well-known structures “can be built in a myriad of variations for specific applications” (as SiTime states in Dkt. No. 45 at 2) does not provide any basis to argue that claims fail to convey sufficient structure. *E.g., Williamson v. Citrix Online, LLC*, 770 F.3d 1371, 1378 (Fed. Cir. 2014) (“A claimed expression cannot be said to be devoid of structure if it is used in common parlance or by persons of skill in the pertinent art to designate

1 structure, even if the term covers a broad class of structures and even if the term identifies the  
2 structures by their function.”) (internal citations omitted).

3 Even if the “drive or sense means” limitation is construed as a means-plus-function  
4 limitation, the result would not change. The corresponding structures in the ’643 patent are same  
5 well-known structures for driving and sensing a semiconductor element understood by one of  
6 ordinary skill in art. (Meinhart Decl. ¶¶ 56-67.) The specification explains that the semiconductor  
7 element “can be actuated with drive, i.e., transducer means known per se,” which falls within this  
8 class of structures. (’643 patent at 8:48-49, *see also* 6:43-46, 4:59-61 (electrical drive means),  
9 4:64-65 (piezoelectric drive or sense means), 4:66-67 (electrostatic actuation), 7:49-51  
10 (piezoelectric actuator), 7:51-52 (electrostatic actuator); Meinhart Decl. ¶¶ 60, 67.) Thus, the  
11 corresponding structure for “drive means” includes devices that actuate the semiconductor  
12 element, such as a transducer that provides time-varying electrical, mechanical, optical, piezo, or  
13 magnetic forces, causing it to oscillate at or near its resonant frequency. The corresponding  
14 structure for sense means includes devices that detect the movement of the semiconductor  
15 element, such as a transducer that measures electrical, mechanical, optical, piezo, or magnetic  
16 signals over time.

### 17 **III. CONCLUSION**

18 VTT respectfully requests that the Court adopt its proposed claim constructions for the  
19 disputed terms. For each term, VTT’s proposal follows the claim construction approach required  
20 by Federal Circuit precedent and adopts the customary meaning of the claims in a manner  
21 consistent with the claim language, specification, and file history.

22 Dated: March 30, 2020

FISH & RICHARDSON P.C.

23  
24  
25 By: /s/ William R. Woodford  
William R. Woodford

26 Attorneys for Plaintiff VTT Technical Research  
27 Centre of Finland Ltd.